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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,420	03/30/2001	Jean Helen Brittain	GEMS8081.059	3209

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EXAMINER	
FETZNER, TIFFANY A	
ART UNIT	**PAPER NUMBER**
2859	

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/681,420	BRITTAIN ET AL.	
	Examiner	Art Unit	
	Tiffany A Fetzner	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 January 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *18-27* is/are allowed.

6)☒ Claim(s) *1-17 and 28-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 March 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/01/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED Final ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Drawings

2. The objections to the drawings from the 2003 office action are rescinded. In view of the April 15th 2003 Amendment response.

Response to Arguments

3. Applicant's arguments filed December 9th 2003 have been fully considered but they are not persuasive, concerning the **Wang** reference. Applicant argues that the examiner has applied art terminology incorrectly, and that the art applied by the examiner fails to teach the limitations claimed. Specifically, with respect to **Claim 1**, applicant argues that the **Wang** reference fails to "define" (i.e. **claim 1**) or "select" (i.e. **claim 28**) "a desired field of view that is larger than an optimal imaging volume of the MRI scanner". The examiner respectfully disagrees with applicant, that this feature is not suggested by the **Wang** reference at all, because the volume of the Bo field homogeneity which limits the Field of view, in combination with the receiver coil size

within the volume of the Bo field homogeneity **is** intrinsically an effective "optimal imaging volume", which the **Wang** reference specifies as typically "less than 48 centimeters" with conventional MR scanners, even though the term 'optimal imaging volume' is lacked by the reference. [See col. 2 lines 26-32]. The examiner has attempted to clarify for applicant exactly how an optimal imaging volume of "less than 46 centimeters" is taught, shown and suggested by the reference, in the **Final rejections** given below. The art applied in this application has not changed, therefore a **final rejection** is proper.

4. The **35 USC 103 (a)** rejections given below, which explain how the limitation of an "optimal imaging volume" is met by the **Wang** reference, is made final even though the actual claimed terminology is lacked. [See the **35 USC 103 (a)** rejections given below], because an 'optimal imaging volume is intrinsically present within the reference, from the teachings of col. 2 lines 27-32].

5. The examiner also notes that on page 14 paragraph 1 of the December 9th 2003 response applicant mistakenly identifies **claim 7**, as having been indicated as allowable. **Claim 7** was in fact rejected in the previous office action, and that rejection is made **final** below.

6. The examiner notes that the applicant's argument of April 15th 2003, argues persuasively that the **Yoshitome** H6-311977 reference fails to restrict excitation to a selected slab thickness because, in **Yoshitome** H6-311977 excitation may also occur across the entire imaging range as argued by applicant in the April 15th 2003, and

August 20th 2003 responses. Therefore the **Yoshitome** H6-311977 reference is no longer being applied as prior art against the claims of the instant application.

Claim Rejections - 35 USC § 112

7. The rejection of **claim 1**, under***35 USC § 112*** second paragraph is rescinded in view of applicant's December 9th 2003 amendment response.

Claim Objections

The objection to **Claim 28** from the previous office action is **maintained** because the because

A) In lines 12 to 13 are grammatically awkward. The step of "reposition the predefined optimal imaging area with respect to an imaging object an incremental step; is awkward because "an imaging object an incremental step" is awkward. The examiner suggests either "an imaging object **via** an incremental step;" or "**an imaging object incremental step**", where the extra "an is removed

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. **Claims 1-5, 7, 12, 14, 28-30** and **33** are rejected under **35 U.S.C. 103(a)** as being anticipated by **Wang** US patent 5,928,148 issued July 27th 1999.

11. With respect to **Amended Claim 1**, **Wang** teaches and suggests "A method of imaging large volumes without resulting slab-boundary artifacts comprising: the step of "defining a desired FOV" (i.e. in the **Wang** reference the desired field of view is an anatomic region of interest in the lower extremity of a patient's body about 100 centimeters, or 1,000 millimeters) [See col. 2 lines 31-32]. The **Wang** reference also suggests "an optimal imaging volume" even though the term "optimal imaging volume" itself is lacked by the **Wang** reference because the **Wang** reference teaches that the field of view in MR imaging is limited by 'the volume of the Bo homogeneity and the receiver coil size" [See col. 2 lines 27-30]. The examiner considers 'the volume of the B_0 field homogeneity and the receiver coil size to define "an optimal imaging volume" within the NMR / MRI imaging device, because the optimal imaging volume of an MR imaging device is a limited magnetically homogeneous volume that is generally defined as a limited spatial volume (i.e. less than 48 centimeters) "having optimal gradient linearity, uniform magnetic polarizing field, and uniform RF homogeneity, (i.e. the volume of the B_0 field homogeneity) from which a detectable signal, of diagnostically usable quality is received.

12. It would have been obvious to one of ordinary skill in the art at the time that the invention was made that the feature taught by the **Wang** reference which limits the field of view of the MR scanner based on (i.e. the volume of the Bo homogeneity and the receiver coil size") is effectively an "optimal imaging volume" because an optimal detectable signal, originates from the volume of magnetic homogeneity, and preferably from the center of the volume of magnetic homogeneity, . The **Wang** reference teaches

that the FOV limited by the volume of the Bo homogeneity and the receiver coil size", (i.e. the optimal imaging volume of the device) is typically less than 48 centimeters. [See col. 2 lines 26-32] Therefore any FOV that is less than 48 centimeters in interpreted by the examiner as falling within the effective "optimal imaging volume" of the **Wang** reference.) Because the 100 cm., anatomic region of interest is larger than the "less than 48 centimeters" requirement, which limits the FOV based on the "effective" 'optimal imaging volume' of the **Wang** reference. The **Wang** reference teaches and suggests the step of "defining a desired field of view (FOV) larger than an optimal imaging volume of an MR scanner;"

13. In the **Wang** reference the thickness of a diagnostically usable slab, (i.e. 130 to 170 millimeters thick; or 13 to 17 centimeters thick) is selected and used, for acquiring all arteries of interest [See col. 9 lines 10-12] Additionally, because the selected slab thickness in a first direction (i.e. the 13 to 17 centimeters is smaller than) of the overall desired field of view of 100 centimeters, and meets the 'effective optimal imaging volume' criteria of the **Wang** reference of being "less than 48 centimeters", [See col. 2 lines 26-32], the **Wang** reference teaches and suggests applicant's limitation of "selecting a slab thickness in a first direction that is smaller than the desired FOV and within the optimal imaging volume of the MR scanner" [See also col. 5 lines 27-31, col. 9 lines 10-12 , col. 5 lines 27-30, where a thickness of 100 to 150 mm is taught; col. 2 lines 40-50; col. 7 lines 8-10; and col. 8 line 65 through col. 9 line 17].

14. The examiner also notes that Figure 4 shows a patient being scanned along the axis of the patient table (i.e. the z-axis) and that each of the smaller fields of view in the **Wang** reference is 32-40 cm., which all meet the "effective optimal imaging volume" criteria taught by the **Wang** reference of being less than the 46 centimeters, maximum field of view, that is restricted by the volume of Bo homogeneity and the receiver coil

size. [See col. 2 lines 26-32]. Because **Wang** desires to image an overall volume of 100cm., and must concatenate at a minimum at least three FOV's that are each less than 48 centimeters to image the entire region of interest; each FOV images at least 3-4 slabs which are 10 to 17 centimeter thick. The examiner notes that each of the slabs also meets the less than the 46 centimeters, "effective optimal imaging volume" criteria of Wang.. Therefore the slab thickness of **Wang,** of 10 to 17 centimeters, is also within the effective "optimal imaging volume of the MR scanner" taught / suggested by **Wang.** For clarification purposes in **Wang** reference there are 3-4 slabs per FOV and at least 3 FOV's, therefore at a minimum that are at least 9-12 slabs, and 3 different FOV's taught and suggested by the **Wang** reference, which are used to image the 100 centimeter patient region of interest.

15. **Wang** also teaches "exciting and encoding spins to acquire data that is restricted to the selected slab thickness;" [See col. 5 lines 27-32] where slab select gradient pulse 222 produces transverse magnetization (i.e. excitation magnetization for the 100 to 150 millimeter slab of interest, therefore the excitation is the same as the slab thickness.

16. Additionally, **Wang** teaches "acquiring a set of MR data (i.e. each of the 3-4 slabs per FOV constitutes "a set of MR data" slabs that includes acquiring full encoding data in the first direction for a subset of another two directions;" [See col. 5 lines 24-53 where the acquired data is fully encoded along the y-axis; for a subset" of partial sampling along the kx direction, and a first field of view along the z-direction, therefore the **Wang** reference meets the criteria for "acquiring full encoding data in the first direction for a subset of another two directions;".] The examiner notes that the claimed limitation fails to require or suggest *how* the "subset of **said** another two directions**" are encoded.** Therefore a reference that has at least full encoding in one direction meets the requirements of this limitation, and applicant**'s** arguments regarding the novelty of

this feature in the February 11th 2003 response are still not persuasive, as of the date of this **final action**.

17. **Wang** also teaches and shows "step-wise moving one of the optimal imaging volume and an imaging object;" [See Figure 4 components 258 and 262 which show this limitation; col. 2 lines 26-50; col. 2 line 62 through col. 3 line 10; col. 3 lines 23-27; col. 5 lines 3-7; col. 5 lines 57 through col. 6 line 17; and col. 6 lines 52 through col. 7 line 10; Figures 4, 5, 6, and 8] and **Wang** teaches and shows "acquiring another set of MR data between each step-wise movement until the desired FOV" (i.e. the 'desired large region of interest of 100 centimeters) "is imaged." [See col. 5 lines 55-67; col. 7 lines 1-22; col. 2 lines 26-32 Figure 6, Figure 5].

18. With respect to **Amended Claim 2**, **Wang** teaches that "the step of exciting and encoding spins is further defined as restricting excitation to the slab thickness, such that data acquisition is restricted to the selected slab thickness." [See col. 5 lines 27-32] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 2.**

19. With respect to **Claim 3**, **Wang** teaches the step of "encoding and filtering data so as to acquire data that is limited to the selected slab thickness." [See col. 5 lines 27-32; col. 4 lines 56-61; col. 4 lines 45-50; and Figure 1] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 3.**

20. With respect to **Claim 4**, **Wang** teaches that "the first direction is in a direction of the step wise movement and is defined as in a z-direction", because conventionally in the MRI / NMR art the z-axis is along the bore of the magnet, therefore Figures 3, 4, 9a, and 9b suggest "step wise movement a z-direction" of the MR magnet bore shown in Figure 1. [See Figures 1, 3, 4, 9a, and 9b]. **Wang** also teaches that "a number of image pixels obtained within the selected slab thickness in the z-direction is at least equal to a

number of kx, ky subsets" because full encoding occurs along the y-axis." [See col. 5 lines 26-53; col. 6 lines 62-65; col. 8 lines 5-10; col. 8 lines 57-58; col. 9 lines 2-16] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 4**.

21. With respect to **Claim 5**, **Wang** teaches that the "MR data acquisition between step-wise movements includes acquiring all k-space data in a direction of motion of a patient table" (i.e. the z-direction is considered to be the direction of motion of the patient table) "for a selected subset of k-space data, in the other two directions." [See Figures 3, 4, 5, 9a, 9b, 1; col. 5 lines 24-67; col. 2 lines 40-50; col. 2 line 62 through col. 3 line 10; The examiner notes that for each Field of view **Wang** teaches full phase encoding along the y-axis, and partial encoding along x, and that the patient is translated (i.e. moved through) the entire region of interest along the direction of motion (i.e. the z-axis), therefore in the **Wang** reference subsets of data in the ky and kx directions are acquired at each FOV kz position.] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 5**.

22. With respect to **Claim 7**, **Wang** lacks directly teaching that "over-sampling of MR data in the first direction" (i.e. the direction of the patient table motion, or z) "is avoided", however **Wang** shows in Figure 5 that FOV acquisition components 250, 252, and 254 occur between table translations, and in Figure 5 these fields of view do not overlap, therefore Figure 5 directly suggests that the method of **Wang** is implementable without oversampling, because in Figure 5 no oversampling occurs. Additionally, Figures 9A and 9B also show that components 214 through 219; do not overlap therefore, Figures 9A and 9B also suggest that the method of **Wang** is implementable without oversampling, even though the reference lacks an actual statement teaching this

limitation directly. [See Figures 5, 9A, and 9B] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 7**.

23. With respect to **Claim 12**, **Wang** teaches "selecting a distance of the step-wise movement as an integer multiple of an image resolution in the first direction", because the incremental movements of the patient table are 20-30 centimeters [see table translations of col. 9 lines 38-39; Figure 5] and 20-30 centimeters is an integer multiple of 20 to 30 times the resolution, in the first direction. The examiner notes that **Wang** teaches and suggests that the resolution is 1 mm by 1mm for a 2D acquisition, in col. 10 lines 5-6, and 1 mm by 1 mm by 1 mm for a 3D acquisition because A 3D acquisition is taught in col. 10 lines 38-29. The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 12**.

24. With respect to **Claim 14**, **Wang** suggests "selecting the step-wise movement distances to acquire complete MR data in each direction" [See col. 5 lines 23-53 where there is full encoding along y, and partial encoding along x , which is then zero-filled to acquire a complete set of data for x, while moving the table at each complete step along z] The same reasons for rejection, and obviousness that apply to **claim 1** also apply to **claim 14**.

25. With respect to **Claim 28**, **Wang** teaches and suggests via figure 1, that the MR scanner uses a computer program to control the MR medical image scanner and create images across scanning boundaries without boundary artifacts, the computer (i.e. see computer system 108 of figure 1) "having a set of instructions to control the computer to: "select an FOV" (i.e. in the **Wang** reference the desired field of view is 100 centimeters, or 1,000 millimeters) [See col. 2 lines 26-32]. The **Wang** reference also suggests "an optimal imaging area" even though this term itself is lacked by the **Wang** reference for

the same reasons as those given in the **rejection of claim 1** which need not be reiterated.

26. Additionally, because desired 100 cm. FOV centimeters is larger than 13 to 17 centimeter slabs used to make each FOV that is "less than 48 centimeters" the **Wang** reference does readily suggest applicant's limitation to "select an FOV spanning an area greater than a pre-defined optimal imaging area of the medical image scanner;". The examiner also notes that conventionally, in a medical application the *ideal* desired field-of-view (i.e. the 100 centimeter region of interest, which is scanned by at least three FOV's with each FOV being less than 48 centimeters and concatenated together) because the *ideal* desired field-of-view is usually larger than the optimal imaging area or volume, (i.e. the volume that is less than 48 centimeters, in the Wang reference) because generating a large homogeneous optimal imaging area, (i.e. 2D) or volume, (i.e. 3D) is difficult, and most of the objects imaged, (i.e. such as human patients) are larger than the optimal imaging area, or volume (ie the less than 48 centimeters) produced by the medical scanner for scanning.

27. **Wang** also teaches and suggests the step to "apply an RF pulse to excite a region in at least a first direction in the selected FOV;" [See RF excitation pulse 220 which excites magnetization in a slab-select direction in the FOV; col. 5 lines 23-67] **Wang** also teaches and suggests the step to "apply magnetic field gradients to encode the region in the first direction" [See col. 5 lines 23-67] Because **Wang** excites a three-dimensional slab of a specified thickness" (i.e. 100 to 150 millimeters from col. 5 lines 27-31) in the first slab-select direction, and acquires k-space data for a subset of the kx and ky directions, the **Wang** reference suggests that the computer is programmed to "acquire 3D" (i.e. slab) k-space data in a first direction" (i.e. the slab-select direction) "for

a subset of the second and third direction" (i.e. the kx and ky directions. [See col. 5 lines 23-53].

28. Additionally, **Wang** teaches and suggests from figures 4, 5, 6, and 8 the step to "reposition the predefined optimal imaging area with respect to an imaging object *in incremental steps*." [See abstract; col. 5 lines 54-67] **Wang** also teaches, shows, and suggests the step to "repeat data acquisition and the imaging area incremental repositioning until complete image data are acquired across the entire FOV to reconstruct an image of the FOV". [See Figures 4, 5, and 6, col. 5 lines 55-67; col. 7 lines 1-22; Figure 6, Figure 5, figure 8, figure 4; col. 2 lines 26-50; col. 2 line 62 through col. 3 line 10; col. 3 lines 23-27; col. 5 lines 3-7; col. 6 lines 1-17; and col. 6 lines 52-68]. The same reasons for rejection, and obviousness, that apply to **claim 1** also apply to **claim 28.**

29. With respect to **Claim 29**, the **Wang** suggests and shows the step of "moving a patient table a fixed distance to acquire additional k-space data", because each field of view acquired contains k-space data, and the figures show more than one step-wise incrementing of the patient table to acquire a field of view.. [See Figures 4, 5, 6, 8, and the computer components of figure 1; col. 5 lines 23-67] The same reasons for rejection, and obviousness that apply to **claims 1, 8, 18, 19, 28** also apply to **claim 29** and need not be reiterated.

30. With respect to **Claim 30**, **Wang** suggests that three dimensional data is obtainable because Wang obtains volumetric "slab" data throughout the reference, and teaches a 3D fast acquisition of magnetic resonance data in col. 10 lines 38-39] Additionally, **Wang** suggests the step of "moving a patient table a fixed distance for a number of acquisitions until a set of k-space data are acquired of a given slab; moving the patient table a greater distance, than the fixed distance; repeating the act of image

data acquisition for a second slab, and moving the patient table the fixed distance for the same number of acquisitions as for the first slab until a set of image data are acquired", because figure 5 shows that the translation of the table is different between acquired field of views, although the field of views are the same. The examiner is interpreting each field of view or FOV as representing a set of k-space data, made up of individual slabs of a fixed width." **Wang** also suggests that three dimensional data may be reconstructed because the 3D fast acquisition data is also used to reconstruct an image for comparison to the 2D acquisition in col. 10 of **Wang**. Additionally, the same reasons for rejection, and obviousness that apply to **claims 1, 28** also apply to **claim 30** and need not be reiterated.

31. With respect to **Claim 33**, the **Wang** method teaches, and shows "moving a patient table in incremental step distances that is a multiple of a z-resolution", because the incremental movements of the patient table are 20-30 centimeters [see table translations of col. 9 lines 38-39; Figure 5] and 20-30 centimeters is a multiple of 20 to 30 times the resolution, because the resolution is 1 mm by 1mm for a 2D acquisition and 1 mm by 1 mm by 1 mm for a 3D acquisition. A 3D acquisition is taught in col. 10 lines 5-6 and lines 38-29. The same reasons for rejection, and obviousness that apply to **claims 1, 28** also apply to **claim 33** and need not be reiterated.

Allowable Subject Matter

32. **Claim 18** is considered to be allowable over the prior art of record, because the prior art does not teach or suggest the limitations of "**defining a fixed slab** with respect to the magnet to acquire MR data, **acquire full MR data in a direction of table motion, defined as z-direction, for a selected kx-ky subset in the fixed slab; increment the patient table while maintaining position of the fixed slab; and repeat the acquire and increment acts until an MR data set is acquired across the**

desired FOV to reconstruct an image of the FOV" in combination with all of the other features of **claim 18**, it is the combination of all of the features of claim 18 taken as a whole, that makes **independent claim 18**, allowable over the prior art of record.

33. With respect to **Claims 19-27** each of these claims are considered to be allowable by the examiner because they depend from allowable independent **claim 18. Claims 6, 8-11, 13, 15-17, 31, 32** and **34-37** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

34. With respect to **claim 36**, The prior art does not teach or suggest the combination that the first direction is the z-direction "and that the MR data acquired in the z-direction is represented in a number of **retained pixels**, the number of which is greater than a number of kx -ky subsets, and wherein the RF pulse is continually applied to maintain a steady-state but where MR data is not acquired during table movement, and wherein the magnetic field gradients encode a 3D trajectory that is uniform in kz."

35. The **prior art made of record** and not relied upon is considered pertinent to applicant's disclosure.

A) **Yoshitome** Japanese Laid-open Patent Application (kokai) No. **H6-311977** disclosed November 8th 1994; [The examiner is using the English version of this reference as provided by applicant and submitted with applicant's Information Disclosure Statement].

B) **Yoshitome** Japanese Laid-open Patent Application (kokai) No. **H5-95927** disclosed November 1st 1994;. [The examiner is using the English version of this reference as provided by applicant and submitted with applicant's Information Disclosure Statement].

C) **Meaney et al.,** US patent 5,924,987 issued July 20th 1999, filed October 6th 1997 which teaches an MRI angiography device where a table platform is moved step-wise to image an object greater than the field-of-view of the device.

D) **Pelc et al.,** US patent 6,445,181 B1 issued September 3rd 2002, filed November 9th 2000 which teaches an MRI method for imaging a Field of View which is larger than a magnetic field, with both step-wise and continuous table motion.

36. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

37. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tiffany Fetzner** whose telephone number is **(517) 272-2241**. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm., and on alternate Friday's from 7:00am to 3:30pm.

39. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Diego Gutierrez**, can be reached on **(571) 272-2245**. The fax phone

number for the organization where this application or proceeding is assigned is **(703) 872-9306**.

TAF
March 24, 2004

Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800